Siemens Matsushita Components

# Multilayer Ceramic Capacitor Arrays

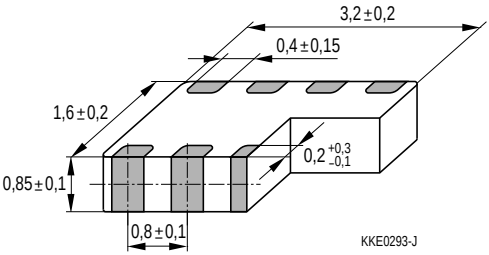
MLCC-Arrays (Size 1206)

C0G(NP0)/X7R/Y5V

Data Book Supplement

**Features**

- 4 single capacitors case size 0603 are combined in one 1206 package
- Very well- known case size 1206
- Suitable for the reflow soldering process




| | C0G (NP0) | X7R | Y5V |
|---|---|---|---|
| **Electrical characteristics** | | | |
| Dielectric | Class 1 | Class 2 | Class 2 |
| Rated voltage $V_R$ Vdc | 50 | 16/25/50 | 16/25 |
| Climatic category (IEC 68- 1) | 55/125/56 | 55/125/56 | 30/085/56 |
| Temperature range | – 55 °C ... + 125 °C | – 55 °C ... + 125 °C | – 30 °C ... + 85 °C |
| Available capacitance values $C_R$ E series | 10 pF … 470 pF E3 | 470 pF … 0,1 µF E3 | 0,1 µF; 1 µF |
| Capacitance tolerance | ± 10 % | ± 20 % | + 80 % / – 20 % |
| Temperature coefficient (tolerance) | $0 \pm 30 \cdot 10^{-6}$/K | – | – |
| Max. rel. capacitance change $\Delta C/C$ | – | ± 15 % | – 82% ... + 22 % |
| Voltage test | $2{,}5 \cdot V_R$/5 s | | |
| Dissipation factor tan δ (limit value) | | | $< 125 \cdot 10^{-3}$ |
| Insulation resistance[1] at 20 °C | $\geq 10^4$ MΩ | $\geq 10^4$ MΩ | $\geq 10^4$ MΩ |
| | – | – | – |
| Time constant τ[1] at 20 °C | > 500 s | > 500 s | > 500 s |
| **Solderability** (IEC 68–2–58) | | | |
| Wetting of pads > 95% | 215 °C, 3 sec | | |
| Resistance to soldering heat | 260 °C, 10 sec | | |

1) Whichever is lower.

**Product range**

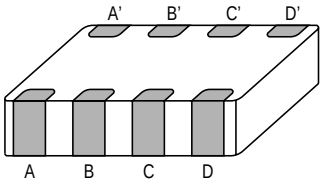
| Temp. charact. | C0G (NP0) | | X7R | | | Y5V | |
|---|---|---|---|---|---|---|---|
| Type | B37871 | | B37872 | | | B37873 | |
| $V_R$ (Vdc) | | 50 | 16 | 25 | 50 | 16 | 25 |
| | Chip thickness 0,85 ± 0,1 mm | | | | | | |
| 10, 0 pF | | | | | | | |
| 22,0 pF | | | | | | | |
| 47,0 pF | | | | | | | |
| 100, pF | | | | | | | |
| 220 pF | | | | | | | |
| 470 pF | | | | | | | |
| 1,0 nF | | | | | | | |
| 2,2 nF | | | | | | | |
| 4,7 nF | | | | | | | |
| 10 nF | | | | | | | |
| 22 nF | | | | | | | |
| 47 nF | | | | | | | |
| 100 nF | | | | | | | |
| 1,0 µF | | | | | | | |

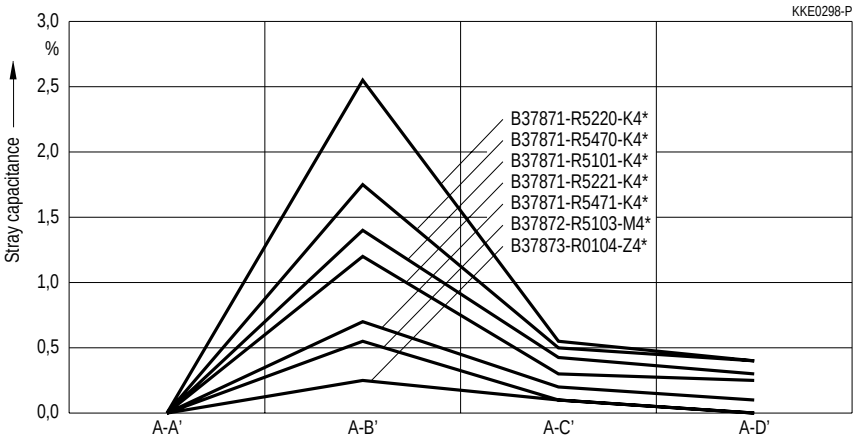
**Ordering codes**

| Temp. charac. | $V_R$ (Vdc) | $C_R$ | Ordering code | Packing units | Taping |
|---|---|---|---|---|---|
| C0G (NP0) | 50 | 10 pF | B37871- R5100- K41 | 4 000 | Cardboard |
| | | 22 pF | B37871- R5220- K41 | 4 000 | Cardboard |
| | | 47 pF | B37871- R5470- K41 | 4 000 | Cardboard |
| | | 100 pF | B37871- R5101- K41 | 4 000 | Cardboard |
| | | 220 pF | B37871- R5221- K41 | 4 000 | Cardboard |
| | | 470 pF | B37871- R5471- K41 | 4 000 | Cardboard |
| X7R | 16 | 100 nF | B37872- R9104- M41 | 4 000 | Cardboard |
| | 25 | 22 nF | B37872- R0223- M41 | 4 000 | Cardboard |
| | | 47 nF | B37872- R0473- M41 | 4 000 | Cardboard |
| | 50 | 470 pF | B37872- R5471- M41 | 4 000 | Cardboard |
| | | 1,0 nF | B37872- R5102- M41 | 4 000 | Cardboard |
| | | 2,2 nF | B37872- R5222- M41 | 4 000 | Cardboard |
| | | 4,7 nF | B37872- R5472- M41 | 4 000 | Cardboard |
| | | 10 nF | B37872- R5103- M41 | 4 000 | Cardboard |
| | | 22 nF | B37872- R5223- M41 | 4 000 | Cardboard |
| | | 47 nF | B37872- R5473- M41 | 4 000 | Cardboard |
| Y5V | 16 | 1,0 µF | B37873- R9105- Z41 | 4 000 | Cardboard |
| | 25 | 100 nF | B37873- R0104- Z41 | 4 000 | Cardboard |

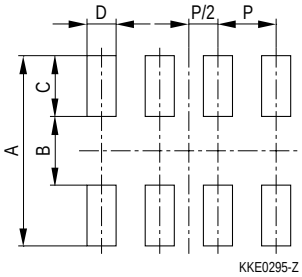
**Crosstalk**

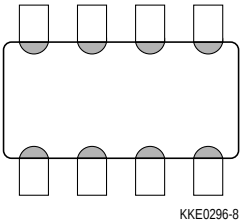
(Stray Capacitance)




**Geometry of solder pads**

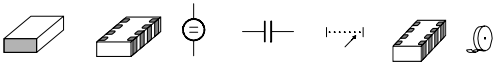



Dimensions in mm

| A | B | C | D | P |
|---|---|---|---|---|
| 2,8 ± 0,1 | 1,0 ± 0,1 | 0,9 ± 0,1 | 0,4 ± 0,05 | 0,8 ± 0,1 |

**Ordering code system**



**B37871- R 5 101- K 4 1**

**Packaging**

1 = cardboard tape, reel dia. 180 mm (7 '')
2 = blister tape, reel dia. 180 mm (7 '')
3 = cardboard tape, reel dia. 330 mm (13 '')
4 = blister tape, reel dia. 330 mm (13 '')

**4 = 4 Cap array**

**Capacitance tolerance**
(tolerance code in acc. with IEC 62)

| C0G(NP0) | X7R | Y5V |
|---|---|---|
| K = ± 10 % | M = ± 20 % | Z = + 80 % - 20 % |

**Capacitance**, coded

| | | |
|---|---|---|
| 100 = 10 pF | 472 = 4,7 nF | 104 = 100 nF |
| 101 = 100 pF | 103 = 10 nF | 105 = 1 µF |
| 102 = 1 nF | 473 = 47 nF | |

**Rated voltage**

| Rated voltage [Vdc] | 16 | 25 | 50 |
|---|---|---|---|
| Code | 9 | 0 | 5 |

**R = Array**

| **Type and size** | | | |
|---|---|---|---|
| Chip size (**inch** / mm) | Temperature characteristics C0G(NP0) | X7R | Y5V |
| **1206** / 3216 | B37871 | B37872 | B37873 |

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